INTRO TO TRIG REVIEW

$\tan \frac{8\pi}{13}$

$\sec 23° 18' 15''$ ← template Key

$\cot \theta = -1.362$

$\cot^{-1}(-1.362)$

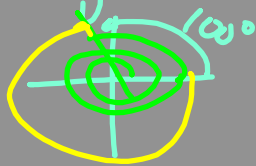Coterminal angles

$820°$

| $100°$ |
| $-260°$ |

$(co)°$

1/ $\sin(-\theta) = -\sin\theta$ ← csc θ

$\tan(-\theta) = -\tan\theta$ ← cot θ

$\cos(-\theta) = \cos\theta$ ← sec θ

3/ Use All Star Trig Chart

4/ $\cot\theta = \frac{3}{7}$ & $\tan\theta - \bigcirc \frac{?}{3}$ Imp.
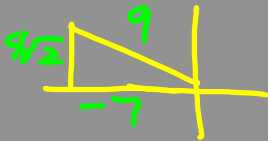
Facts to Know

1) $\sin \theta = \frac{o}{h}$
   $\cos \theta = \frac{a}{h}$
   $\tan \theta = \frac{o}{a}$

2) Stick your . . .
   all to trig func.

3) All Star . . .

4)

5) Special ∠ Table
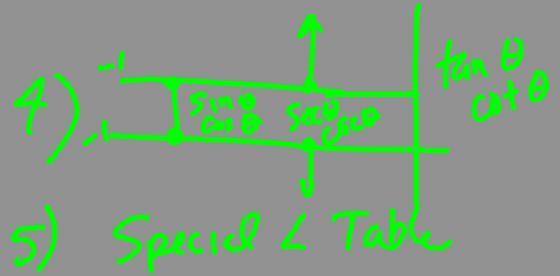
5-7   # DRAW THE PICTURE!

Given $\sec\theta = -\dfrac{9}{7}\dfrac{r}{x}$ and $\sin\theta > 0$, find

       1) Find quadr. — ASTC $\tan\theta$.

$9\sqrt{2}$ 9

-7

$y^2 + (-7)^2 = 9^2$

$y^2 + 49 = 81$

$\sqrt{y^2} = \sqrt{32} \leftarrow \#_2$

$y = \pm 4\sqrt{2}$

$\tan\theta = \dfrac{y}{x}$

$= \dfrac{4\sqrt{2}}{-7}$

8/ <u>Complementary func.</u>

$\cos 42°28' = \sin 47°32'$

            ↑

$\begin{array}{r} 89\ 60' \\ 42°\ 28' \\ \hline 47°\ 32' \end{array}$

Degrees to Radians

$$188° \cdot \frac{\pi}{180°} = \frac{188}{180}\pi = \frac{94\pi}{90} = \frac{47\pi}{45}$$

Radians to Degrees

$$\frac{18\pi}{5} \cdot \frac{180°}{\pi} = 648°$$

$$\frac{\overset{36°}{180°}}{\pi}$$

$$\begin{array}{r} 360 \\ 144 \\ 144 \\ \hline 648 \end{array}$$

MUST BE IN RADIANS

Arc Length

$$S = r\theta$$

Area of a Sector

$$A = \frac{1}{2}\theta r^2$$

Angular Velocity

$$\omega = \frac{\theta}{t}$$

Linear Vel

$$V = \frac{s}{t} = \frac{r\theta}{t} = r\omega$$

Tire $= \dfrac{37 \text{ rev}}{\text{min}}$
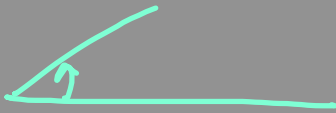
$r = 3$ ft

How fast is the vehicle moving in mi/hr?

$$V = \frac{r\theta}{t} = \frac{3 \cdot 37 \cdot 2\pi}{1 \text{ min}} = 222\pi \frac{ft}{min} \cdot \frac{1 \, mi}{5280 \, ft} \cdot \frac{60 \, min}{1 \, hr}$$

$$= 7.92558 \, mi/h$$

Angle of Elev

Angle of Depr

A 168°

290 mi

b

37°   135°

0°   R

12° 320   258°

C

$90° - 37° - 12° = \boxed{41°}$

Navigation

N, 0°

270°   E
           90°

180°
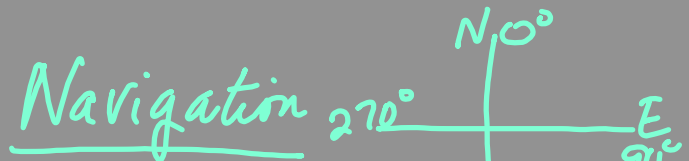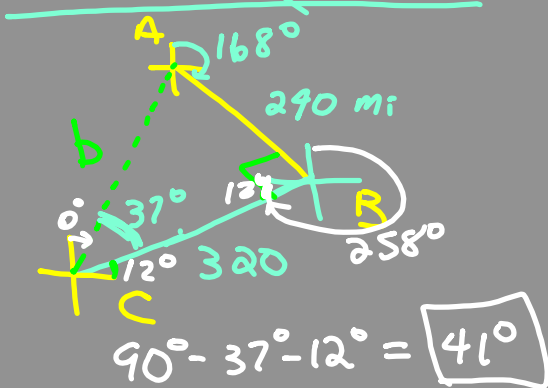
Plane 290 mi @ 168°

Turn 320 mi @ 258°

How far & in what direction to
    return to home airport?

$b^2 = 290^2 + 320^2$

$\tan \theta = \dfrac{290}{320}$

$\tan^{-1}(290/320)$

$\theta = 37°$